

## REMARKS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks. The Claims have not been amended and accordingly, Claims 1-16, 18-31 and 33-45 are currently pending in the application.

### **I. Rejection of Claims 1-11, 13-16, 18-26, 28-31, 33-41 and 43-5 under 35 U.S.C. §103**

The Examiner has rejected Claims 1-5, 7-11, 14, 16, 18-20 22-26 and 29 under 35 U.S.C. §103(a) as unpatentable over "Development of test vehicles for evaluating plastic-encapsulant reliability and improving thermal conductivity of encapsulant materials," by Enlow *et al.* ("Enlow") in view of Shanefield *et al.* Soc. Adv. Mater. & Process. Eng. 1987, 1, 70-72 ("Shanefield"). Claims 6 and 21, Claims 5, 13, 15, 20, 28, 30-31, 33-35 and 43-45, and Claim 36 are also rejected under 35 U.S.C. §103(a) as unpatentable over Enlow in view of Shanefield, and further in view of one or more of newly cited references: Gabriel *et al.* Chem. Abstr. 1995, 112, abs 175490z ("Gabriel"); Ziai *et al.* J. Microelect. Sys. 1996, 5, 199-123 ("Ziaie"); or previously cited references: Sweet, Burack, Mancke, or Wada. The Applicants respectfully disagree with the basis of the Examiner's rejection.

The asserted combination of Enlow and Shanefield fails to establish a *prima facie* case of obviousness because this combination fails to teach or suggest all of the elements of the inventions of independent Claims 1, 16 and 31, and their respective dependent claims, and because the asserted combination is improper.

The Examiner appears to assert that the electrical component is one of Enlow's silver-comb-pattern sensors with the smaller spacing, while the sensor corresponds to Shanefield's triple track pattern of three conductors. Previously, the Examiner relied on the inherent teachings of Enlow's smaller spaced silver-comb-pattern that would allow the smaller spaced silver-comb-pattern to oxidize at a greater rate than the larger spaced silver-combed-pattern sensor. The Examiner presently asserts that this smaller spaced silver-comb-pattern sensor can be replaced with the triple track pattern of Shanefield. This combination, however, fails to teach or suggest a sensor trace configured to oxidize at a rate greater than the electrical component when the sensor trace and the electrical component are exposed to a same oxidizing environment, as recited in Claim 1 and the other independent Claims 16 and 31. In particular, there is nothing in Shanefield that suggests that its triple track pattern used in a silicon IC test device and cited by the examiner, is configured to oxidize at a rate greater than Enlow's silver-comb-pattern sensor with the larger spacing. Moreover, there is no inherent reason why this would be the case without making substantial non-obvious modifications to the device in Shanefield. In fact, given the teaching in Shanefield that its triple track conductor is made of aluminum plus trace amounts of copper and silicon (page 72), in contrast to Enlow's silver-comb-pattern, it is more likely that Shanefield's triple track conductor would oxidize at a slower rate, which is contrary to the elements of the present claimed inventions.

Additionally, the combination of Enlow and Shanefield is improper because it lacks the requisite motivation. A person skilled in the art would not be motivated to find or add to Enlow the teachings and suggestions of Shanefield, inasmuch as there is no teaching or suggestion that Shanefield's triple track pattern is even capable of being configured to oxidize at a rate greater than Enlow's remaining silver-comb-patterns. For instance, Shanefield provides no information about

the spacing or sizes of the triple track pattern, or about how or over what range these parameters could be adjusted. Shanefield also provides no teaching or suggestion that any of materials that could comprise the triple track pattern (80% Ni plus 20% Cr alloy; 75%Ag plus 25% Pd alloy, or Al plus trace Cu and Si alloy) are more readily oxidized than silver. Therefore, one skilled in the art would not be motivated to replace one of Enlow's silver-comb-pattern sensors that are closely spaced with any of Shanefield's triple track patterns. Even if this were done, there is no teaching or suggestion that the triple track sensor would oxidize at a rate greater than the other silver-comb-pattern devices.

The asserted combination of Enlow and Shanefield is also improper because the combination would destroy the functionality of the device disclosed in Enlow. Enlow obtains quantitative data from his silver-comb-pattern sensor by using comb patterns of varying lines/spaces to obtain comparative data. (page 316 first column, second paragraph). If one were to replace one of Enlow's closely spaced comb patterns with Shanefield's aluminum triple track pattern, Enlow's sensor would no longer function to provide such comparative, quantitative data as intended by Enlow, and therefore the functionality of Enlow's sensor would be destroyed.

The other references cited by the Examiner do not cure the deficient teachings or suggestions or impropriety of the combination of Enlow and Shanefield, in as much as these references are merely cited by the Examiner for the proposition of teaching different material compositions of the sensor trace or an IC including the sensor device.

Because the combination relied on by the Examiner does not support the Examiner's rejection of independent Claims 1, 16 and 31, the combination fails to establish a *prima facie* case of obviousness regarding Claims 1, 16 and 31 and their respective independent claims. The Applicants

therefore traverse the Examiner's rejections of Claims 1-11, 13-16, 18-26, 28-31, 33-41 and 43-5 under 35 U.S.C. §103(a) and respectfully request the Examiner withdraw the rejections.

## **II. Allowable Subject Matter**

The Examiner has indicated that dependent Claims 12, 27 and 42 are allowable, if rewritten in independent form. The Applicants appreciate this indication of allowable subject matter, but as noted above, the other pending Claims in this application are not rendered obvious by the references of record. Accordingly, the Applicants respectfully requests the Examiner to pass Claims 1-11, 13-16, 18-26, 28-31, 33-41 and 43-5 to issue, in addition to Claims 12, 27 and 42.

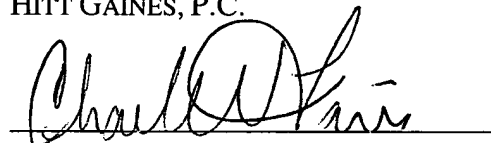
## **III. Conclusion**

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-16, 18-31 and 33-45.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

HITT GAINES, P.C.

A handwritten signature in black ink, appearing to read "Charles W. Gaines", is written over a horizontal line.

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Dated: 10/27/03

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